Lower Columbia River Steelhead ESU

Hatchery Program Assessment

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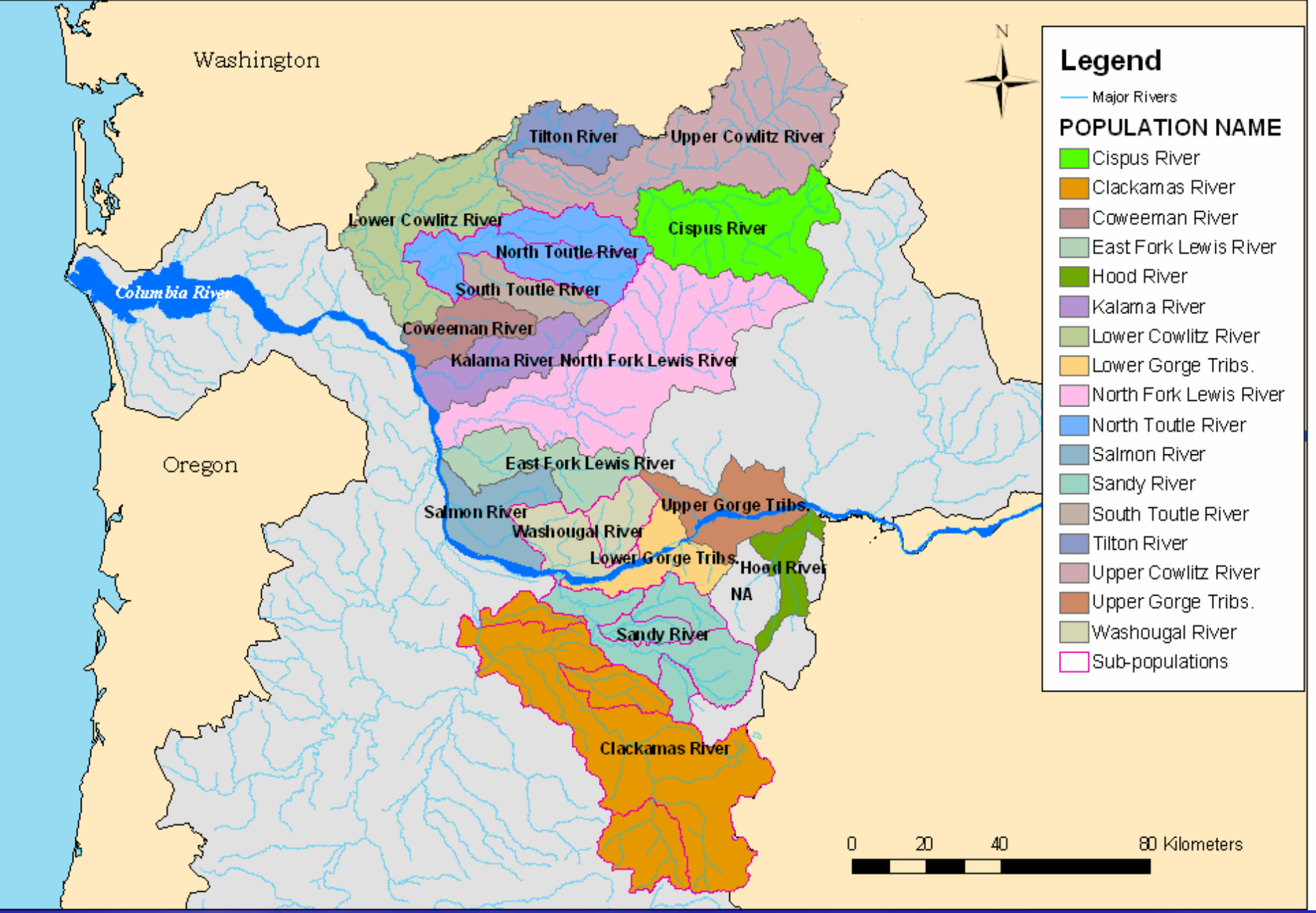
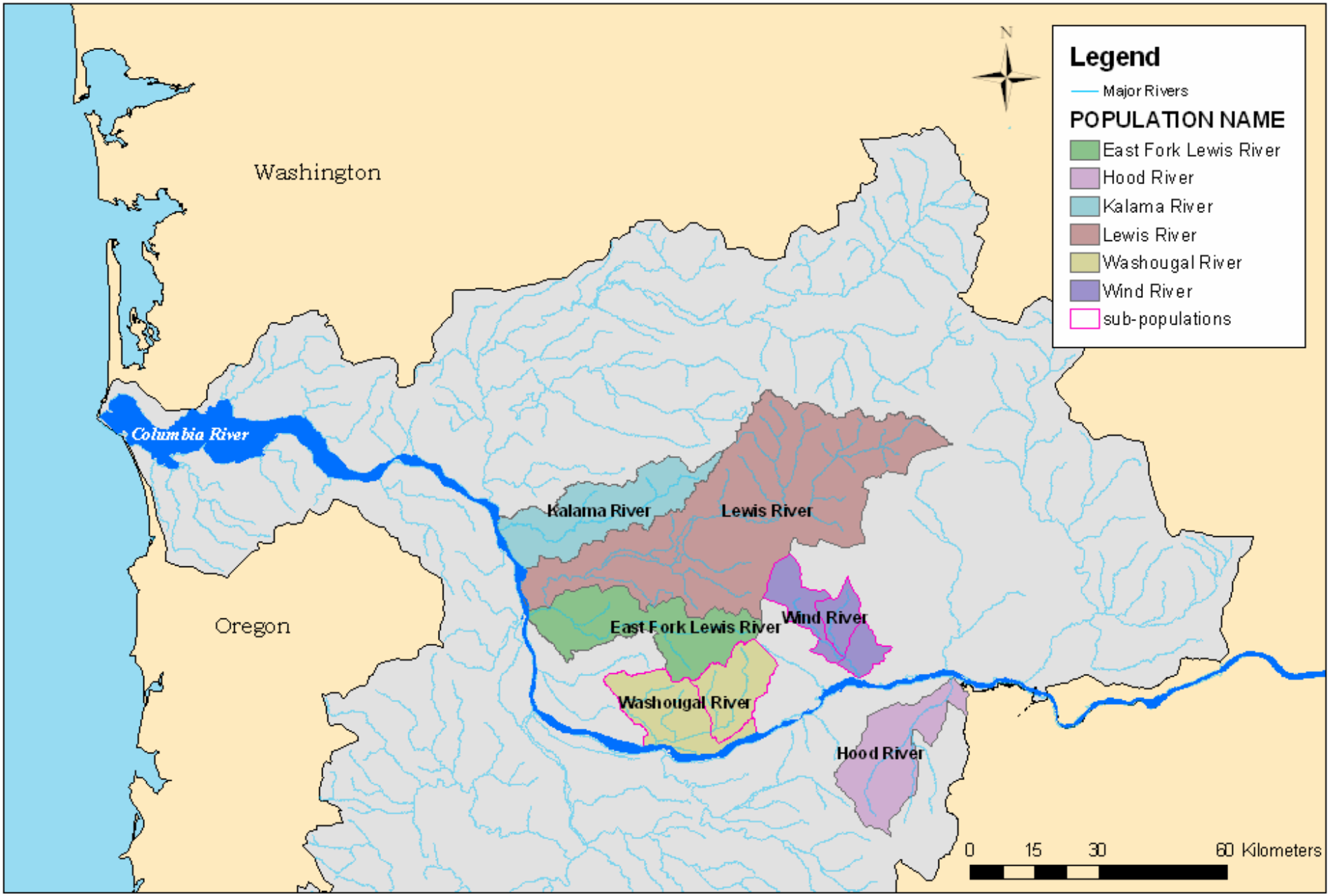
Summary

- 23 Historic Populations In ESU
  - 17 Winter Steelhead Populations
    - Three of these are considered extinct
  - 6 Summer Steelhead Populations



LCR Winter Steelhead Populations



LCR Summer Steelhead Populations

Summary

- 9 In ESU Artificial Propagation Programs
  - 7 Winter Steelhead Programs
  - 2 Summer Steelhead Programs
- Winter Steelhead Program Releases:

  800,000 smolts
- Summer Steelhead Program Releases:

  100,000 smolts

Summary

- 21 Non-ESU Artificial Propagation Programs
  - 8 Winter Steelhead Programs
  - 13 Summer Steelhead Programs
- Early Winter Steelhead Releases:
  810,000 smolts
- Summer Steelhead Releases:
  1,280,000 smolts

Hatchery Listing Policy

Effects of hatchery fish on the likelihood of extinction of an ESU, depend on how hatchery fish affect four key attributes.

Effects on Abundance of ESU

- Program fish have increased abundance of the ESU – Cowlitz Basin Re-introduction program above Cowlitz Falls Dam and in the Tilton River.
- Natural spawning program steelhead also support natural spawning populations
- Returns of hatchery programs have been abundant

Returns to the Hatcheries

- 2002 Cowlitz River late run winter steelhead returns were 4,420 adults.
- 2003 Kalama River integrated winter steelhead program returned 660 adults
- 2003 Kalama integrated summer steelhead program returns was 2,535 adults

Effects on Productivity of ESU

- The effects of programs on productivity are unknown
- Non-ESU programs have negatively affected the productivity of the ESU as identified by BRT
- Hatchery programs are self-sustaining
- Uncertain if re-introduced steelhead will be self-sustaining

Effects on Spatial Distribution of ESU

- Hatchery programs have increased spatial distribution -- Re-introduction programs in Cowlitz River basin.
- Hatchery programs support naturally spawning populations

Effects on Diversity of ESU

- Hatchery programs have reduced impacts to diversity by developing locally-adapted broodstock programs -- Sandy River, Clackamas River, Kalama River, Hood River
- Non-ESU programs have potentially decreased diversity

Effect of Artificial Propagation on VSP Attributes

Viability Criteria	BRT VSP Risk Score	Decreases Risk	Neutral or Uncertain	Increases Risk
Abundance	3.3	√		
Productivity	3.3		√	
Spatial Structure	2.7	√		
Diversity	3.0	√		

Recommendation: No Change Threatened